

CLAIMS

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ART 34 ANDT

1. A manufacturing method of a Ta sputtering target in which a Ta ingot or billet formed by melting and casting is subject to forging, annealing, rolling processing and the like to prepare a sputtering target, wherein the ingot or billet is forged and thereafter subject to recrystallization annealing at a temperature of 1373K to 1673K.
5. A manufacturing method of a Ta sputtering target according to claim 1, wherein forging and recrystallization annealing at a temperature of 1373K to 1673K are repeated at least twice.
10. A manufacturing method of a Ta sputtering target according to claim 1 or claim 2, wherein the recrystallization annealing after the forging or rolling performed at a temperature of 1373K to 1673K is performed at a temperature between the recrystallization starting temperature and 1373K.
15. 4. A manufacturing method of a Ta sputtering target according to any one of claims 1 to 3, wherein, after the final rolling processing, recrystallization annealing is performed at a temperature between the recrystallization starting temperature and 1373K, and finish processing is further performed to obtain a target shape.
20. 5. A manufacturing method of a Ta sputtering target according to claim 4, wherein, after performing rolling, crystal homogenization annealing or stress relieving annealing is performed.
6. A manufacturing method of a Ta sputtering target according to any one of claims 1 to 5, wherein the average crystal grain diameter of the target is made to be a fine crystal grain size at 80 μm or less.
25. 7. A manufacturing method of a Ta sputtering target according to any one of claims 1 to 5, wherein the average crystal grain diameter of the target is made to be a fine crystal grain size at 30 to 60 μm .
8. A manufacturing method of a Ta sputtering target according to any one of claims 1 to 7, and a Ta sputtering target obtained with said method, wherein there is no uneven macro structure in the form of streaks or aggregates on the surface or inside the target.